Part of #18

PATENT APPLICATIONS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2307
KLUG	Examiner: P. Wang
Serial No.: 07/975,905	
Filed: November 12, 1992	AFFIDAVIT OF JOHN KLUG UNDER 37 C.F.R. §1.132
Atty. File No.: 2355-1-1	
For: "REMOTE MULTIPLE-USER EDITING SYSTEM AND METHOD"	

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, DC 20231 ON THIS 25th DAY OF April, 1994.

SHERIDAN, ROSS & McINTOSH

BY: Janice Messer

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

I, John Klug, declare as follows:

I am the sole inventor of the above-referenced patent application.

I have read and understand the above-identified patent application, including the pending claims, a copy of which claims is attached hereto as Exhibit 1.

I have obtained and used a product marketed by Group Technologies, Inc. under the name of "ASPECTS". I believe that the "ASPECTS" product is covered by one or more of the pending claims of the above-identified patent application.

I have read the following articles attached hereto as Exhibit 2 and I am familiar with the subject matter thereof:

1. "Plugging the Gap Between E-Mail and Video Conferencing", The New York Times, June 23, 1991.

2. "A Whole New PC Aspect", USA Today, October 21, 1991.

3. "Mac Applications Prove Windows is No Substitute for the Real Thing", INFOWORLD, August 6, 1990, p. 98.

4. "Groupware Grows Up" MacUser, June 1991, pp. 207-211.

It is my opinion that the need addressed by and the commercial success of the "ASPECTS" products as described or referred to in the above-identified articles is due to features in the product which are covered by one or more of the pending claims of the above-identified patent application.

I have read the following product literature attached hereto as Exhibit 3:

1. Shareview 300 product literature, ©1993, 1994.

2. Intel Pro-Share Personal Conferencing product literature, ©1994.

Based solely on such product literature, it is my opinion that the Shareview 300 and Intel Pro-Share products appear to be covered of the pending claims of the above-identified patent application. Further, it is my opinion that the need addressed by each of these products is met due to features in the products which are covered by one or more of the pending claims of the above-identified patent application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or imprisonment, or both, under §1.001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or patent issued thereon.

Dated this _____ day of _____, 1993.

By:_____
John Klug

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EXHIBIT 1

PENDING CLAIMS

1. A computer file editing system for a plurality of users at different remote locations, comprising:

a plurality of personal computers, one for each of the users, each of said plurality of personal computers including computer file review means, at least one of said personal computers being designated host computer for given file editing operations and having multi-tasking processing means for coordinating the execution of said file editing operations comprising edits of less than the entirety of a given computer file inputted by at least the user of one of said personal computers, and for coordinating the transfer of data corresponding with and limited to said file editing operations from said host computer to the others of said plurality of personal computers whereby said file editing operations and said corresponding limited data transfer are performed in a predetermined manner by said host computer; and

interconnecting means for electrically interconnecting said host computer with the others of said plurality of personal computers to permit transmission of electrical signals corresponding with said file editing operations therebetween;

wherein said plurality of users are permitted to concurrently view said given computer file and, subject to practical system limitations, said computer file review means, multi-tasking processing means and interconnecting means operate so that said file editing operations and said corresponding limited data transfer occur on a substantially real-time basis relative to said edit inputs to permit said plurality of users at said different

remote locations to review with their respective review means said edits made to said given computer file substantially contemporaneously with the corresponding input of said edits and execution of said file editing operations.

2. A computer file editing system according to Claim 1, further comprising:

at least two voice communication means for transmitting audio signals representative of any user's voice to each other user.

3. A computer file editing system according to Claim 1, wherein said interconnecting means is a non-dedicated digital communications system for transferring said data digitally between said host computer and said remaining ones of said plurality of personal computers.

4. A computer file editing system according to Claim 2, wherein said interconnecting means is a non-dedicated digital network which comprises said voice communication means and means for contemporaneously transferring said data between said host computer and said remaining ones of said plurality of personal computers and transmitting said audio signals among the users.

5. A computer file editing system according to Claim 1, wherein said interconnecting means comprises a plurality of modems, each having digital-to-analog conversion means and analog-to-digital conversion means and each electrically interconnected between one of said personal computers and an analog communications network, said analog communications network operable for

transferring said data between at least two of said personal computers; and

wherein each of said personal computers includes data compression/decompression means for compressing said data to be transferred before said data is sent over the analog communications network and for decompressing said data when received from the analog communications network.

6. A computer file editing system according to Claim 1, wherein said interconnecting means is an integrated services digital network.

7. A computer file editing system according to Claim 1, wherein said interconnecting means comprises a plurality of modems, each having digital-to-analog conversion means and analog-to-digital conversion means and each electrically interconnected between one of said personal computers and an analog communications network, said analog communications network operable for transferring said data between at least two of said personal computers; and

wherein each of said modems includes data compression/ decompression means for compressing said data to be transferred before said data is sent over the analog communications network and for decompressing said data when received from the analog communications network.

8. A computer file editing system according to Claim 1, further comprising:

a plurality of modems, each having digital-to-analog conversion means and analog-to-digital conversion means and each electrically interconnected between one of said personal computers and an analog communications network, said analog communications network operable for transferring said data between at least two of said personal computers; and

data compression/decompression means for compressing said data to be transferred before said data is sent over the analog communications network and for decompressing the data when received from the analog communications network.

9. A system for contemporaneously editing a given computer file by any of a plurality of users, comprising:

a plurality of personal computers, one for each of the users, each of said personal computers including means for inputting edits to said given computer file and means for displaying said given computer file, at least one of said personal computers being designated host computer and having multi-tasking processing means for coordinating the execution of file editing operations comprising edits of less than the entirety of said given computer file from the inputting means of any of said personal computers and the transfer of data corresponding with and limited to said file editing operations from said at least one of said personal computers to the others of said plurality of personal computers; and

interconnecting means comprising a non-dedicated digital communications system for transferring said data digitally between said host computer and said others of said plurality of personal computers;

wherein said plurality of users are permitted to concurrently view said given computer file and, subject to practical system limitations, said inputting means, display means, multi-tasking processing means and interconnecting means operate so that said file editing operations and said corresponding limited data transfer occur on a substantially real-time basis relative to said edit inputs to permit said plurality of users at their respective remote locations to review with their respective display means said

given computer file reflecting said edits made thereto substantially contemporaneously with the corresponding input of said edits and file editing operations.

10. A system for contemporaneously editing a file according to Claim 9, wherein the coordinating means is operatively interconnected with the inputting means and displaying means of each of said remaining ones of said plurality of personal computers through said interconnecting means and comprises means for sequentially polling the input from each of the inputting means, means for executing any editing operation input by one of said users on a file, and means for sending said data from said host computer to all of the displaying means as the editing operation is input by said one of said users.

11. A system for contemporaneously editing a file according to Claim 10, further comprising:

a plurality of voice communication means, in one to one correspondence with said plurality of personal computers, for transmitting audio signals representative of any user's voice to each other user.

12. Cancelled.

13. A system for contemporaneously editing a file according to Claim 11, wherein said interconnecting means is a non-dedicated digital network which comprises said voice communication means and means for contemporaneously transferring said data between said host computer and said remaining ones of said plurality of personal computers and transmitting said audio signals among the users.

14. A system for contemporaneously editing a file according to Claim 10, wherein:

said interconnecting means comprises:

a plurality of converting means, each electrically interconnected with one of said personal computers, for converting digital signals from each of said personal computers to analog signals and converting analog signals to digital signals, and

an analog communications network for electrically interconnecting the plurality of converting means and transferring said analog signals to and from the converting means, wherein

each of said personal computers further includes data compression/decompression means for compressing data to be transferred before said data is sent over the analog communications network and for decompressing said data when received from the analog communications network.

15. A system for contemporaneously editing a file according to Claim 10, wherein:

a first plurality of said personal computers are electrically interconnected in a first local area network and at least a second plurality of said personal computers are interconnected in at least a second local area network; and

said interconnecting means includes means for interconnecting said first local area network with said at least second local area network for allowing transfer of said data to and from the personal computers in said first and said at least second local area networks.

16. Cancelled.

17. A system for contemporaneously editing a file according to Claim 10, wherein the coordinating means includes means for excluding input from at least one selected inputting means from the sequential polling.

18. A method for contemporaneously editing a given computer file from any of a plurality of personal computers situated at different remote locations, wherein at least one of said personal computers has multi-tasking capabilities and one of said personal computers is designated as host computer, comprising the steps of:

electrically interconnecting the host computer with the others of said plurality of personal computers over a communications network;

inputting editing instructions which constitute edits to less than the entire given computer file into one of said personal computers;

receiving, at the host computer, the editing instructions which have been input;

editing the file in accordance with the instructions; and

transferring data corresponding with the file editing instructions from the host computer to the remaining ones of said plurality of personal computers over the communications network;

wherein said plurality of users are permitted to concurrently view said given computer file and, subject to practical system limitations, said editing step and said transferring step occur on a substantially real-time basis relative to said edit input so as to permit said data to be reviewed at each personal computer in said different remote locations substantially contemporaneously with the corresponding input of edits and execution of file editing operations.

19. A method for contemporaneously editing a file according to Claim 18 further comprising the step of establishing voice communications over a telephone network among users of each of the personal computers before inputting editing instructions.

20. A method for contemporaneously editing a file according to Claim 18, wherein the step of electrically interconnecting comprises electrically interconnecting the host computer with the remaining ones of said plurality of personal computers over a non-dedicated digital network.

21. A method for contemporaneously editing a file according to Claim 18, wherein the step of electrically interconnecting comprises electrically interconnecting the host computer with the remaining ones of said plurality of personal computers over a communications network including:

a plurality of converting means, each electrically interconnected with one of the personal computers for converting digital signals from said personal computers to analog signals and converting analog signals to digital signals; and

an analog communications network for interconnecting the plurality of converting means and transferring the analog signals to and from the converting means.

22. A method for contemporaneously editing a file according to Claim 19, wherein the step of establishing voice communications comprises establishing voice communications over the same network as said communications network wherein said communications network

is capable of contemporaneous transmission of data and voice signals.

23. An interactive editing system for a plurality of users at different remote locations for permitting any of the users to orally provide file editing instructions comprising edits to less than an entire given computer file, and for permitting substantially contemporaneous viewing of the editing, relative to the edit inputs, by all of the users, comprising:

voice communication means, in one-to-one correspondence with the users, for transmitting audio signals representative of any user's voice and said orally provided file editing instructions to each of the others of said plurality of users;

a personal computer, having multi-tasking processing means and a display, for use by one of the users to input and execute the editing instructions orally provided by the others of said plurality of users;

a plurality of remote terminals, one for use by each of the remaining ones of said plurality of users and each having a display; and

interconnecting means for electrically interconnecting said personal computer with each of said remote terminals and for transferring data corresponding with the file editing instructions, comprising edits to less than an entire given computer file, between said personal computer and said remote terminals;

wherein said plurality of users are permitted to concurrently view said given computer file and, subject to practical system limitations, said file editing instruction execution and said corresponding data transfer occur on a substantially real-time

basis relative to said edit inputs to permit said plurality of users at said different remote locations to view edits made to a given computer file substantially contemporaneously with said edit inputs and the execution of said file editing instructions.

24. Cancelled.

25. An interactive editing system according to Claim 23, wherein said interconnecting means is a non-dedicated digital communications system for transferring said data digitally between said personal computer and said remote terminals.

26. An interactive editing system according to Claim 23, wherein:

said interconnecting means comprises a plurality of modems, one of said modems having digital-to-analog conversion means and analog-to-digital conversion means, said one of said modems electrically interconnected between said personal computer and an analog communications network and each of the remaining one of said plurality of modems containing analog-to-digital conversion means and electrically interconnected between a corresponding one of said remote terminals and said analog communications network, said analog communications network operable for transferring said data between said personal computer and said remote terminals, and

said one of said modems includes data compression/ decompression means for compressing said data to be transferred between said personal computer and said remote terminals before said data is sent over the analog communications network and for decompressing said data when received from the analog

communications network and each of said remaining ones of said plurality of modems includes data decompression means for decompressing said data when received from the analog communications network.

EXHIBIT 2

The New York Times

NEW YORK, SUNDAY, JUNE 23, 1991

Technology

Plugging the Gap Between E-Mail and Video Conferencing

By EDMUND L. ANDREWS

ARLINGTON, Va.

CALL it software for brainstorming. In an attempt to mimic the process of solving problems by throwing people together in a room, a start-up company here has developed the first computer program that lets people in far-flung locations work simultaneously on a single problem.

Created by Group Technologies Inc., the program is designed to fill gaps left by electronic mail and video conferencing. In what amounts to a conference call over a computer, it allows participants to work together simultaneously on the same document. Each person can change or add material — a word, paragraph, notation or a graph — while seeing what the others are doing.

"We think there's a dynamic energy or synergy that really gets going when people work together," said T. Reid Lewis, president of Group Technologies, which was founded in 1988 by a cadre of graduates of Duke University. "If we're talking together, I get myself all psyched up and focus all my attention on one particular problem."

Called Aspects, the software allows people using Apple Macintosh computers to collaborate in either free-form "meetings," in which everybody can contribute at once, or more structured encounters in which participants take turns. For example, a team of lawyers split between Dallas and New York might want to work together on a legal brief. Typically, the lawyers would talk over an ordinary telephone conference call while watching the legal brief evolve on computer screens.

Using Aspects, in what amounts to an enhanced conference call, a lawyer in Dallas might scribble comments in the margins, asking colleagues to bolster a particular argument with better precedents. A second lawyer could then circulate the decision from a similar case, and the group could decide which lines from that decision to insert into the new filing. Most changes appear on each screen in less than a second.

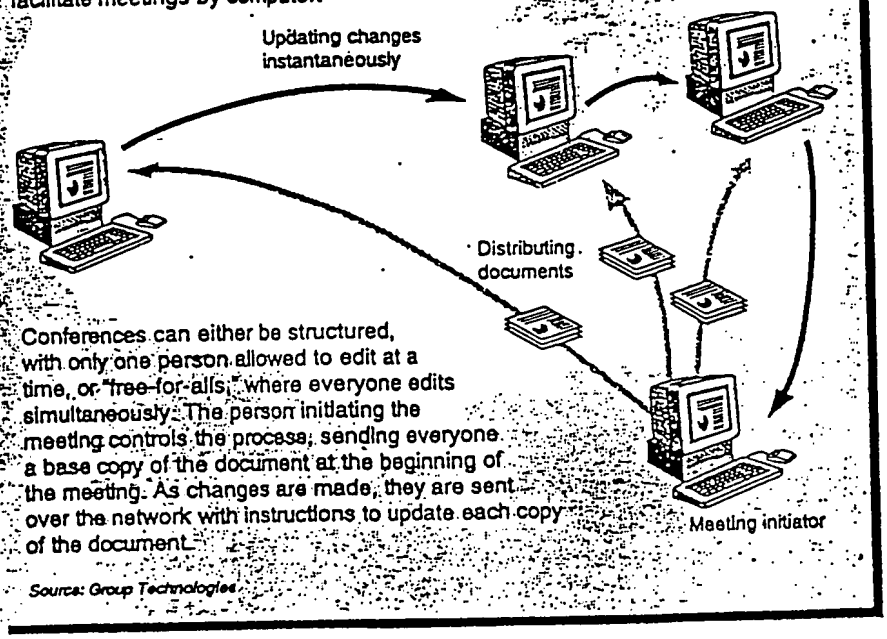
Aspects is one of the newest entries in "collaborative computing" or "groupware." The goal of this kind of software is to make it possible for widely dispersed people to participate jointly on a common problem. One of the first such programs was Notes, introduced in 1989 by the Lotus Development Corporation. It can be used to help people schedule meetings, track progress of different projects and exchange views and information on particular topics.

On Technology Inc. of Cambridge, Mass., headed by Lotus's founder, Mitch Kapor, is beginning sales this month of another collaborative system called Instant Update. Designed for preparing documents, the program allows each user to obtain the latest version of a work in progress and discloses who made which changes when. "It's a way to free people so they can work at the time and place when it's most convenient for them," said Conal Ryan, On's president. In neither Notes nor Instant Update, however, do the different participants interact directly. Users contribute to a document individually and at different times. To be sure, this approach accommodates people with different schedules and allows flexible input from different sources. But the participants lose some of the spark that comes from bouncing thoughts off one another.

Group Technologies's Aspects software lets people at far-flung sites work on a project simultaneously.

One Document, Many Editors, Fewer Hours

New software for the Macintosh allows as many as 16 people in different locations to edit a document on screen all at the same time. The software is designed to facilitate meetings by computer.



Conferences can either be structured, with only one person allowed to edit at a time, or "free-for-alls," where everyone edits simultaneously. The person initiating the meeting controls the process, sending everyone a base copy of the document at the beginning of the meeting. As changes are made, they are sent over the network with instructions to update each copy of the document.

Source: Group Technologies

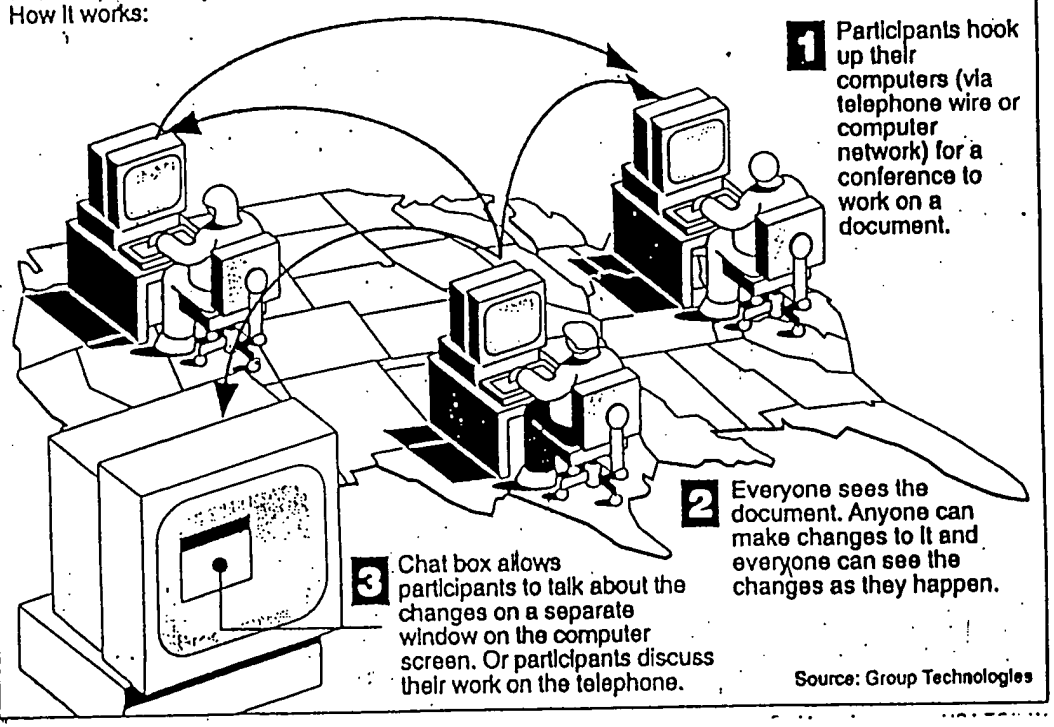
USA TODAY
No. 1 IN THE USA . . . 6.6 MILLION READERS A DAY
MONDAY, OCTOBER 21, 1991

EMERGING TECHNOLOGY

Synchronized work

Up to 16 people can work together on a single document from 16 different locations around the world on, for example, software programmed for Macintosh Computers, called Aspects.

How it works:



Source: Group Technologies

A whole new PC Aspect

The brainstorm has gone high tech. Up to 16 Macintosh users with modems or on a local area network can now simultaneously work on a document using Aspects, one of the hottest new groupware products from Group Technologies in Arlington, Va.

An eight-man startup, with an average age of twenty-something, Group Technologies has been shipping Aspects for nearly a year. The cost: $299 per computer user.

Aspects allows users to send and receive messages, talk on the phone, and type onto the same document. That's ideal for brainstorming sessions involving colleagues as distant as the next building or the next country.

English professors at Stanford and Brandeis universities now use Aspects to teach writing. Collaborating scientists on opposite ends of the globe now bring up the same scientific paper on their computer screens, compose, and edit all in one sitting.

"They've really stumbled onto something big," says Chris Finn, an associate for computer market research firm TeleChoice.

His group just completed a lengthy study of groupware for the trade publication *Network World*. His company uses Aspects to prepare research reports for clients. It enables employees at satellite offices to work with colleagues at an office in Connecticut.

"Our guy in Cincinnati doesn't feel so lonely now," says Finn. TeleChoice now completes reports in two-thirds the time it took previously. "And it's also edited more thoroughly," says Finn, because they eliminate the awkward mechanics of physically combining copies.

— *Andrew Jenks*

Q&A: QUINDLEN AND ALSOP ▪ BY STEWART ALSOP

Mac Applications Prove Windows Is No Substitute for the Real Thing

If you were to take the word of sober, IBM-oriented analysts, you would conclude that the Macintosh is a lost cause.

Oh, sure, the Macintosh is a nice system and Apple Computer is to be congratulated on being so innovative. And people who have already bought the Macintosh will keep buying.

But now that the PC has got Windows, they say, there's just not much growth or excitement left in the old machine.

Indeed, my co-columnist Ruthann Quindlen recently wrote just such a column about Asymetrix's Tool Book program, in a sort of breathless prose that claimed all sorts of amazing advances in the program without once noting that every benefit she enumerated had already been available in Hypercard on the Macintosh for three years.

In any case, the opening this week of the annual summer Macworld Expo in Boston offers a great opportunity to take the measure of the Mac's competitive situation.

From the point of view of the administrator of a little six-person two-server Localtalk network, here are three products that I would have been really excited to discover at Macworld (if I hadn't already seen previews of them from vendors):

Status Mac is a program for gathering information about Macs used on a network — information such as the *hardware configuration* (memory, keyboard, disks, graphics controller, etc.),

system software (versions, inits, cdevs, and other resources), and applications (every program on each user's disk), but not about the directory structure or data files (to protect users' privacy). I've desperately needed this program for months, because I cannot keep track of which version of which program my employees are using. I can't imagine what it's like for administrators with hundreds of users.

By installing a special resource and mailbox in the Microsoft Mail server, a network administrator can send messages to all users asking them to run a profiler on their machines. Mail automatically returns the results and Status Mac integrates them into a database.

To be fair, there are three similar programs on the PC — Tally Systems' PC Census, Ashton-Tate's Control Room, and Merrill & Bryan's Infospotter — but only Control Room operates on networks. Status Mac is from Pharos Technologies, in Cincinnati, Ohio.

Aspects is a new program that lets up to 16 people on a Localtalk network edit one or more documents simultaneously while talking to each other on the phone about what they're doing. Aspects' import/export facility is both fast and supports a wide range of formats, including lots of word processors, plus Mac Paint and PICT files. It would be better if it could handle composed pages from Pagemaker or Quark Xpress, but that's not an easy thing to do. The first user to log on determines who gets editing control, including the option of having an editorial free-for-all. There are lots of nifty features for helping each user be more expressive (such as a wide choice of cursor shapes to differentiate your edits from those of others).

This is the first time I've heard of simultaneous editing on any kind of computer. Aspects is from Group Technologies, in Arlington, Virginia.

Faxgate was actually delivered a couple of months ago, but it is still fascinating to me. Faxgate is an add-on to either Microsoft Mail or CE Software's Quickmail that lets you attach a fax modem to the mail server so that every user on the network can send either text-only fax messages or, using another utility that's bundled for free with Faxgate, to send formatted documents and have them printed digitally on the remote fax machine. You can also set up the fax modem to receive incoming faxes and have them routed to the network administrator for rerouting to the correct person on the network.

I've read at least four or five fax servers that have been introduced for PC networks in the past year, but every one of them either comes with its own server hardware or requires a dedicated PC to function, whereas Faxgate is software that works in the background. (The reality is that no user wants to use the machine that's providing the mail services, so most administrators put the server on an old Macintosh Plus and a 20-megabyte disk.) Faxgate is from Solutions Inc., in Williston, Vermont.

These programs all take advantage of aspects of the Macintosh that are not yet duplicated in the PC environment — the universal, well-defined network; the peer-to-peer network architecture; and the highly integrated system design. So, at least from a sober, logical point of view, you would have to wonder why the Macintosh has now run out of steam.

Ruthann, you might want to drop by every once in a while so I can show you what's happening on the Macintosh.

Stewart Alsop is the editor of PC Letter. He alternates each week in writing this column with Ruthann Quindlen, vice president at Alex. Brown & Sons.

NOTES FROM THE FIELD ▪ BY ROBERT X. CRINGELY

TI's Token Ring Empire Soon to Face Invasion by Infidel Chip Vendors

It's not like I awoke in the middle of the night sweating over Iraq's invasion of Kuwait, but last week's events in the Middle East upset me. I used to work in that part of the world, and have a sense of what's at risk — plenty. Saddam Hussein of Iraq is not liberating the oppressed masses of Kuwait, as he claims. His aim is control of all Middle East oil.

REVOLTING DEVELOPMENT. Conquering Kuwait is no big deal; Pammy and I could have done it, armed with cans of Mace.

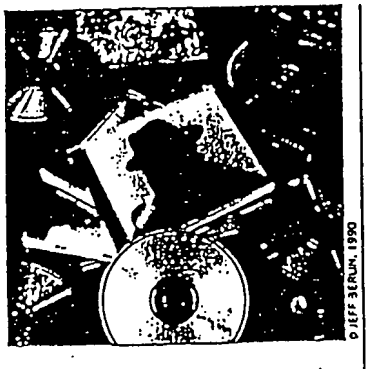
The Kuwaitis aren't fighters. In fact, their last war was in 1952 against Saudi Arabia, resulting in the Neutral Zone between those two countries, making possible countless *Star Trek* reruns.

So Kuwait is a good, though not perfect, environment for an invasion. Sadly, I am hearing from DOS programmers, complaining about less-than-perfect development environments in our business, too.

The latest beefs are with Microsoft C, Version 6.0 and with Borland's Turbo C++. According to recent callers, the Programmers' Workbench in MS C 6.0 is too slow to be usable and can't even be configured for some DOS machines. That's the problem when a language is conceived mainly for OS/2.

As for Turbo C++, bugs and undocumented error messages in the editor's macro language are upsetting some users.

TOKEN ALLEGIANCE. The Kuwaitis are



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shoppers, not fighters. Whatever they need, they buy, including, until last week, national security. Checkbook diplomacy kept Iraq at bay for the last 20 years, and financed Iraq's long war with Iran.

Frankly, I think it's bad form to invade your banker, but then I'm a very genteel guy. For example, while I know that Bill Gates revealed in the September *Playboy* that his video collection includes the complete films of Audrey Hepburn, I'm too refined to even imagine an explanation for this phenomenon.

No explanation is needed for the shift taking place among networking vendors from Texas Instruments' nearly unavailable 4/16 Token Ring chips. Some LAN card designers have already jumped to the Western Digital chip set, to be announced on the 17th, while Toshiba is sending out prototypes of its chip set, with Intel and Chips & Technologies not far behind.

This is a trend, but not a rout, since many vendors will stick with TI and pray for chips, rather than chuck a year's work.

MINOR DISTURBANCES. "What does it matter if Iraq has the oil or Kuwait?" asked Pammy, already beginning to tire of my Middle East reminiscences.

The G. Gordon Liddy in me was quick to point out that all the Arab states, and half the world's oil production, are at risk. "Then Iraq will dominate the energy business like IBM has dominated Token Ring," I explained, "And soon we'll be arguing about all this in the dark."

Speaking of oppressive regimes, the Novell Alumni Association is having a party at next month's Networld show in Dallas on the theme, "ex-Novell employees and those who wanna be." Since Novell CEO Ray Noorda has been invited, party planners are warning all "wanna be's" to get their resumes in order.

Meanwhile, Paramus, New Jersey-based Letraset is in trouble and reportedly up for sale, with Kodak or Du Pont the most likely buyers. In the meantime, Letraset is laying off employees and blowing out excess inventory by offering user groups special deals on its Colorstudio and Designstudio products. Call them, not me, for more information.

DELAY AND CONQUER. "I think you are just too upset about this," Pammy argued. "It won't affect us. We don't use much oil."

"Oh yeah? Look out in the driveway, honey, at our personal hole in the ozone layer. That old Studebaker makes us more vulnerable than anyone. What if this means the end of high-test gas?"

But for the moment, at least, I guess Pammy's right. Maybe there won't be an oil problem at all, though that's a little like expecting software to ship on time, don't you think? Yup, a mistake.

For example, Aldus will announce Freehand 3.0 at Macworld, but don't expect it to actually ship for quite awhile. For those who are willing to wait, the new interface is supposed to be even friendlier. The program is reportedly faster, and for absent-minded users, it's supposed to give visual references to layers and colors to help users keep track of such stuff.

For a real-world example of software that is finally going to ship, look for the new version of Symantec's Grandview, including new presentation features and network support, as well as links to Harvard Graphics. This version was scheduled to ship in May, but look for it to actually appear this week.

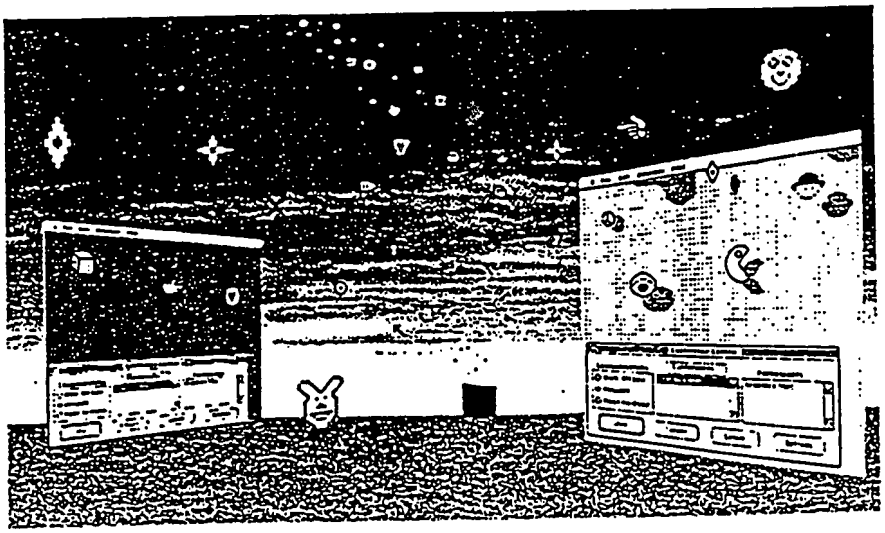
"So the West's best hope against Iraq is *Iran*, Bobby? How much would it cost to convert the Stude to electric power?"

Too much. For the meaning of life or to share an industry secret, give me a call at (415) 329-3555, or try MCI:CRINGE.

Groupware Grows Up

Group Technologies' Aspects is the first real groupware product for the Mac. Is it the forerunner of things to come?

By Victoria von Biel



The time is right for groupware. Network-based applications that allow several users to work on the same document at the same time are hot news, and the release of System 7.0 will only make users hungrier for — and more aware of — such applications. In fact, System 7.0 promises to make the seductive idea of collaborative computing a reality rather than a marketing phrase. The new System's file-sharing capabilities will make access to other Macs across a network incredibly simple; combined with publish-and-subscribe, they will let users quickly access a file, make changes, and have those changes instantly reflected in other users' copies anywhere on the network.

But what seems to have really pushed groupware into maturity is the release of Group Technologies' Aspects 1.0. Aspects lets 2 to 16 users on a network not only *work* on a document at the same time but also *see* each other's changes *as they happen* (see Figure 1). It's the kind of deceptively simple-looking product that makes the most of the Mac's interface and easy networkability. It's also the first true groupware product.

Aspects came on the scene when it looked as though groupware was going nowhere fast. In October 1990, when Aspects was released, the only real groupware was multiuser database programs, such as ACIUS' 4th Dimension, and a handful of products for tasks such as group editing.

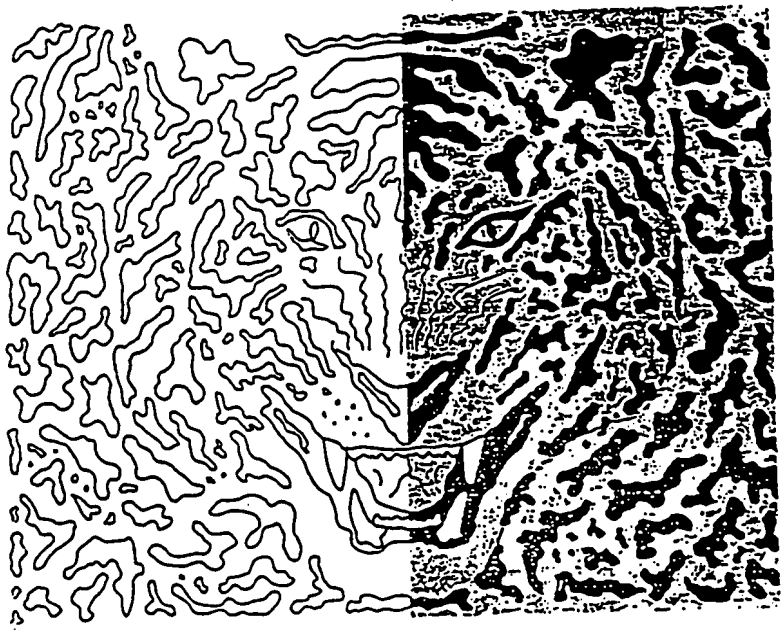
One groupware pioneer is Mainstay, whose MarkUp was the first group-editing product for the Mac. It allowed users to edit and annotate documents across a network and then compile the changes. A newer Mainstay product, Marco Polo, lets users archive documents on a server volume. By and large, however, there haven't been many groupware products, nor has there been a product that allows users to collaboratively work on a document at the same time.

Enter Aspects. Although by no means perfect, it does lay the groundwork for groupware developments to come.

Why has this technology taken so long to come to the Mac? Imagine the difficulties of developing a network-based application, and then multiply those difficulties a hundredfold. You don't just need to come up with an intuitive interface but you must also develop one that lets several people log in to a session easily and quickly. It must also let users make changes simultaneously — and without chaos. You don't just need to develop an application that can send each participant's changes across the network but you must also develop one that sends those changes so quickly and seamlessly that they don't interrupt the work flow. Group Technologies was able to address these problems and come up with solutions that work (some better than others, however).

Meeting on a Mac

To visualize how Aspects works, imagine that you want to have a meeting with some of your colleagues to show them a marketing plan you've sketched out on your Mac. You could distribute hard copies, hold a meeting, brainstorm, and then add any changes to your own electronic copy. Or you could give everyone an electronic copy across a network



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and assimilate their changes in a master file. With Aspects, however, you bypass these steps and hold your meeting on-line. When you set up the meeting, each person on the network who is going to participate receives an identical working copy of the word-processing, draw, or paint document. The changes each person makes are immediately visible to the other participants. During the meeting, you can discuss the document via a conference call or — if telephone contact is inconvenient or impossible — via a "chat box" on-screen. As the person who set up the meeting, you get to decide who can participate in the conference and to what extent each person can comment on or alter the document in question. Members of the meeting can even work on different documents. When the meeting's over, each person has a copy of the document with everyone's input included.

In order to make such a scenario work, Group Technologies had to rethink how documents and the changes made to them are sent across a network. When a meeting starts, documents are sent to participants and loaded into the RAM of each Mac. Depending on the size of the document you're sending, this can take some time. However, once the document has been loaded, Aspects uses a proprietary communications protocol to send *only* the changes — not the entire revised document — across the network or modem lines. As a result, the document updates almost instantaneously each time a change is made.

Participants in the conference can be on an AppleTalk-compatible network (LocalTalk, Ethernet, or token ring), or two participants can use Aspects over a modem line (2,400 bps is the recommended minimum transmission rate, but if you don't mind slow file transfer, you can use 1,200 bps). By using software such as Shiva's Dial-In Network Access, a remote user can call in to a network and appear to other participants as a node on that network.

Aspects has three native formats — a word processor, a drawing program, and a painting program. You can create documents off-line in these native formats or import files from Microsoft Word (versions 3.0 and 4.0); MacWrite II and MacWrite II 5.0; and ASCII, PICT, and MacPaint files. One of Aspects' major shortcomings is its lack of a spreadsheet program or outliner (and you can't import spreadsheets or outlines into Aspects with their functionality intact).

The number of documents you bring

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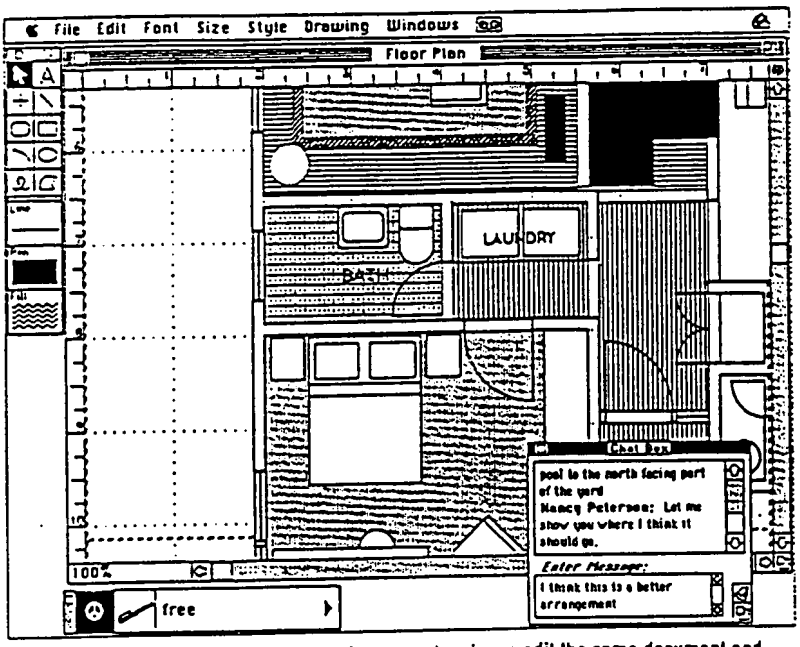

Figure 1: Using Aspects, a group of people on a network can edit the same document and see each other's changes in real time. A conference call is the easiest way to discuss the document while you work, but if that's not possible, you can use the "chat box," which lets you talk interactively on-screen.

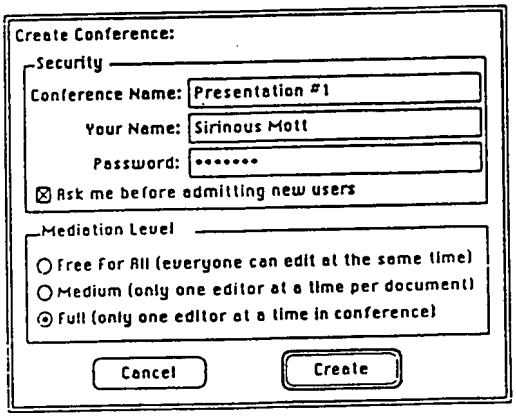

Figure 2: The person who starts a meeting becomes the moderator and has responsibility for deciding to what extent participants can edit a document and who will be allowed to join the meeting.

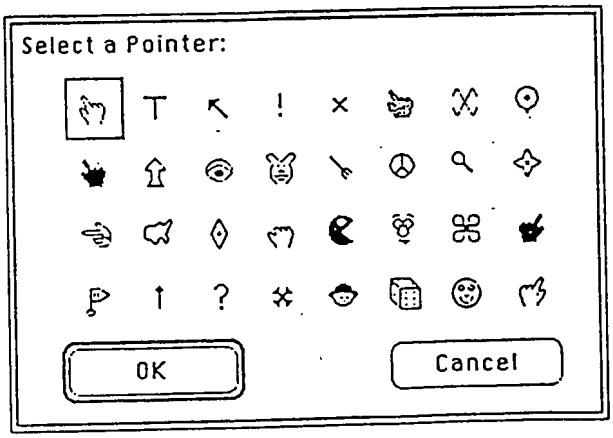

Figure 3: To avoid the confusion of numerous identical pointers on-screen, each participant can choose a unique pointer.

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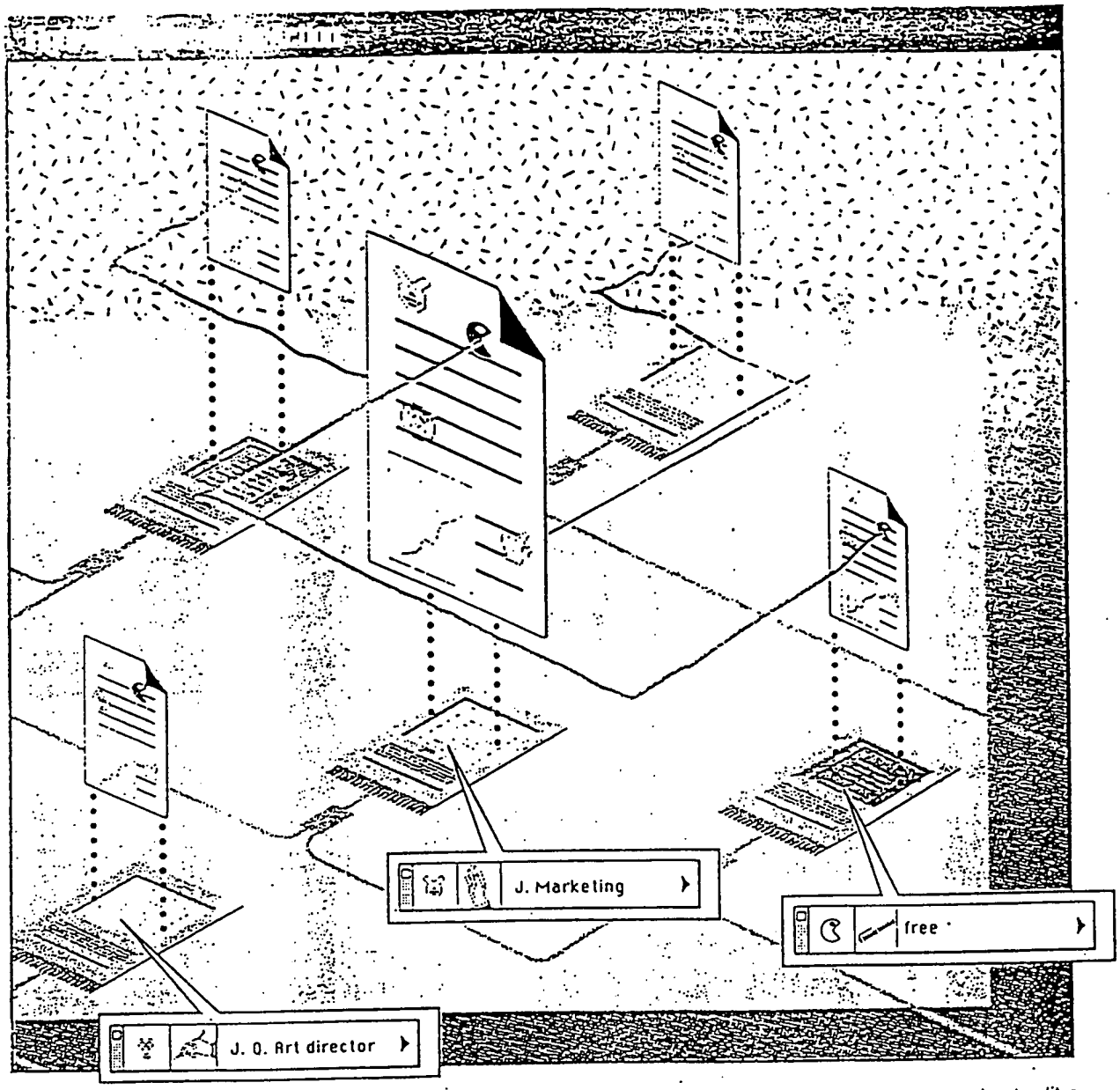

Figure 4: Using Aspects, up to 16 people on a network (or 2 people connected by modem) can see and work on the same document at the same time. A series of icons lets users know whether or not they can edit the document: A raised hand means it's not yet your turn to edit, a pen-in-hand icon means you can go ahead, and a closed pen means you cannot edit the document.

into a meeting depends on available RAM: Aspects can work with 1 megabyte, but what you can do is limited. To work with several documents and use the full painting and drawing capabilities, you should devote at least 1 megabyte of MultiFinder memory to the application alone.

Master of Ceremonies

The person who starts a meeting becomes, by default, the conference moderator, with responsibility for keeping the proceedings running smoothly. (If the moderator leaves the conference — whether intentionally or not — the conference doesn't end; the next person on the network is automatically chosen to be the moderator.) The moderator chooses one of three mediation levels with which to conduct the meeting: Free For All, Medium, and Full (see Figure 2). Free-for-all mediation lets all participants edit a document at the same time; this mode is essentially for brainstorming or informal conferences with few participants. Medium mediation allows only one editor at a time per document, although participants can edit other documents while someone else is editing the main document. Full mediation allows only one editor at a time to make changes to *any* document. The moderator decides who can edit a document and assigns edit control to users (and can also take edit control away). The moderator chooses the level of security as well: You can allow participants to join without

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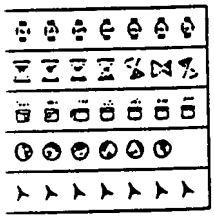

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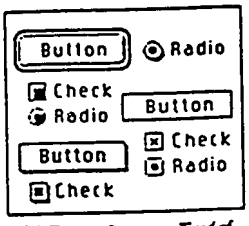

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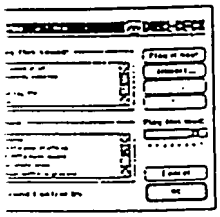

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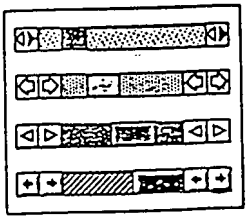
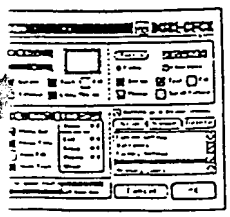
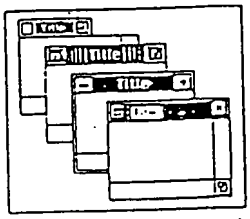


ClickChange Scrollbars. Engineered to achieve maximum performance using our exclusive "proportional elevator" and "dubl-arrow" options. And, oh yeah... they look really cool, too.



kChange Colors. Colorize ur Mac's windows, menus, tons, scrollbars and hilighting. e color schemes to suit your ry mood. Go ahead, live a e. Isn't color one of the reasons u're a Mac!! kinda' person?



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any barriers, require that they use a password to gain access to the conference, or stipulate that each person who wants to join the conference first receive permission.

Having more than one person editing a document can quickly become chaotic. Aspects gets around this problem in several ways. First, it allows participants to choose a unique pointer to show other participants areas of interest on the screen (see Figure 3). Unfortunately, there's no way to tell which pointer belongs to whom, so it can get confusing.

To avoid conflicts when you're working on a word-processing document — for example, entering or editing text — the program shows other participants your insertion point as a gray line and prevents them from working in that paragraph until you've finished. In the Draw mode, the object you're working on is inalterable by other users. There is no locking in the Paint mode, because users are working on a bit level and it's unlikely that more than one user would try to work on the same bit. Because there is no locking in this mode, however, you can avoid some confusion by using medium or full mediation.

When you're working with full or medium mediation, icons appear in a bar at the bottom of the screen to let you know whether or not you can edit the document. An upraised hand tells you it's not yet your turn to edit, a pen-in-hand icon means you can go ahead, and a closed pen means you cannot edit the document. To request edit control, you click on the closed pen (see Figure 4).

Pros and Cons

Aspects' native formats offer only a basic feature set — Group Technologies obviously put its efforts into solving the technological and interface problems of the product rather than into adding frills. This bread-and-butter approach is adequate for initial brainstorming work, but when combined with Aspects' limited import capabilities, it can be a real drawback. For example, you can't use Aspects to edit documents created in a page-layout program or final versions of files that include sophisticated formatting. Another limitation is that Aspects supports only black-and-white graphics, so you can't use it to demo or brainstorm a document, such as a color presentation, that relies on gray scale or color for its effect. In addition, Aspects' lack of a spreadsheet program or outliner seems to knock out a lot of potential business users. Until these problems are addressed, Aspects' main use will be as a brainstorming tool.

On the plus side, Aspects has an easy-to-use and intuitive interface that seldom gets in the way of the business at hand. Joining a conference is extremely simple: Just open the application; select whether you want to work off-line, point-to-point (via modem), or on the network; and double-click on the meeting you wish to join. To edit a document, you select the tool you want to use from a tool palette, and then proceed as normal. Changes in the mediation status or moderator are announced via dialog boxes.

The Future's in Sight

Despite its limitations, Aspects takes the first leap into the kind of intuitive, real-time groupware realm that we should soon be seeing more of. The real question is where Group Technologies will choose to go with the product. One option would be for it to expand Aspects' scope by beefing up the native applications and allowing users to import a much wider variety of applications. Another scenario — and one that is more likely to produce well-crafted, productive applications — would be for the company to license the technology to third parties, who would then create their own specialized applications.

As for the future of groupware, a natural progression seems to be into the area of multimedia, by allowing users to include multiple voice annotations with their work, for example. Whatever happens, we're bound to see more-sophisticated groupware in the next few years.

Get Info

Aspects

$$$$

Published by: Group Technologies, 1408 N. Fillmore Street, Suite 10, Arlington, VA 22201; (703) 528-1555.

List Price: Single-user package, $299; five-user package, $895; ten-user package, $1,295.

Comments: Aspects 1.0 lets 2 to 16 users on a network (or 2 users connected by modem) simultaneously work on a document and see each other's changes. It was the winner of the 1990 *MacUser* Editors' Choice Award for best work-group product.

EXHIBIT 3

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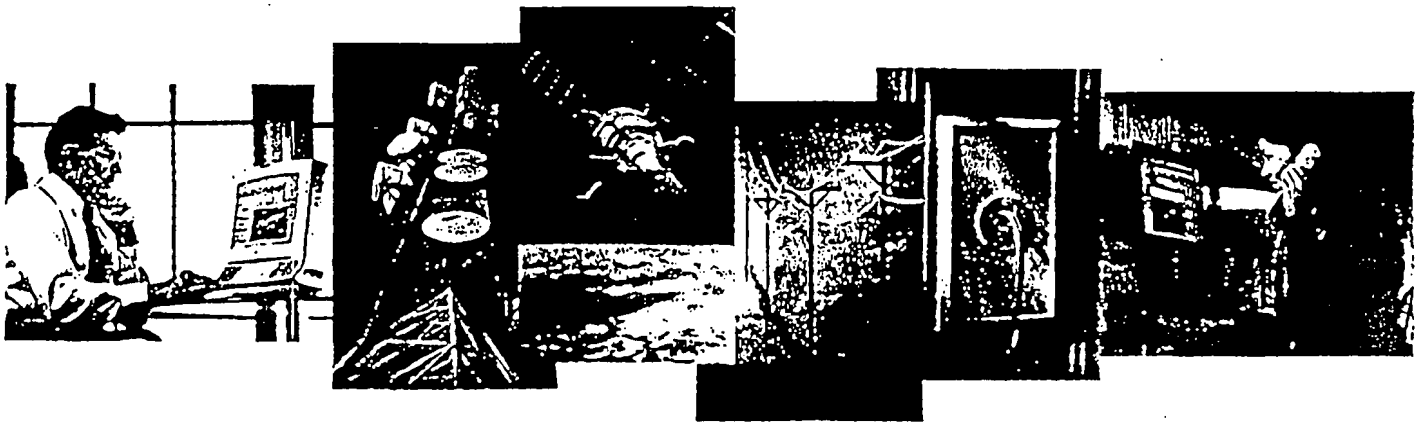

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FEATURES	BENEFITS
Operates on a standard analog telephone line	Allows users to easily install and affordably use the system on readily available, existing telephone lines; the single line connection assures easy and inexpensive access, worldwide.
Collaborative Document sharing	Allows users to work together, naturally and easily, on a shared document just as if they were meeting in the same room.
Collaborative Whiteboard with draw, paint and text tools	Users can spontaneously brainstorm together and display ideas graphically for more effective communication.
Audio recording	Allows users to record important ShareView 300 conversations for later review and to share with colleagues for improved communication and understanding; ShareView's technology allows 30 minutes of audio to be recorded on one 1.44 MB floppy disk.
Phonebook	File information about contacts, including photographs and ShareView Business Cards, so that it can be easily retrieved and used with ShareView.

ShareVision

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ShareView™ 300

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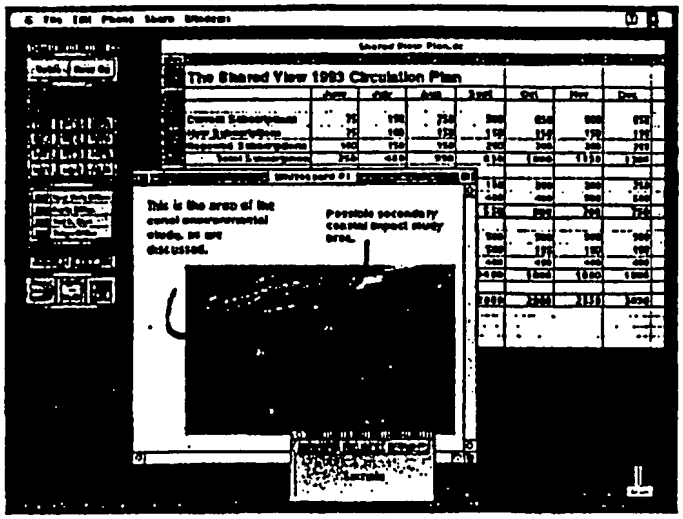
You can both work on the same document from popular Macintosh software applications. You have simultaneous control of the same shared window, so it's easy to edit, review and collaborate on documents with another ShareView user.



Screen-Based Telephone
ShareVision's software provides an intuitive telephone interface to make calls, keep phonebooks and monitor activity.

Shared Whiteboard
A Whiteboard makes meetings more productive. It's a better way to explain and understand complex concepts, brainstorm ideas, outline objectives. With the shared Whiteboard and tools it is easy to draw, point, outline or critique spontaneously.

SYSTEM SPECIFICATIONS

Audio	Speech Compression Algorithm Bandwidth	VATP™ (Vector Adaptive Transform Processing™) 4800 bps, dynamically allocated		
Modem	Communication Rate Data Operating Modes Modem Command Set Fax Mode	14400, 12000, 9600, 7200, 4800, 2400, 1200, 300 bps CCITT V.42, V.42bis, V.32, V.32bis, V.22, V.22bis, V.21 Bell212A, Bell103 Enhanced Hayes® AT command set Fax class1 (EIA/TIA 578), Fax class 2 (proposed: EIA/TIA 592) and Group 3 send and receive facsimile. Supports: V.29, V.27ter, V.21 Channel 2, V.17		
Power Requirement	ShareView Audio Card	14 Watts		
Mechanical	*Item* ShareView Audio Card	*Card Type* NuBus	*Weight* 0.5lb (0.25 Kg)	*Dimensions* 4" x 12.75" (10cm x 32.4 cm)
Environmental	*Operating Temperature* 50° to 104° F (10° to 40°C)	*Humidity* 30% to 90%	*Storage Temperature* 50° to 104° F (10° to 40°C)	
System Requirements	Apple® Macintosh II, IIcx, IIci, IIfx, IIvx, Macintosh Centris™ 650, Macintosh Quadra™ 700, 800, 900, 950 and Performa™ 600 with System 7.01 or higher, 4MB of RAM. Additional RAM may be required for extensive collaboration. One NuBus slot is required for ShareView 300.			
Telephone Line Requirement	Standard analog telephone line with RJ-11 wall jack.			
Video Upgrade	A ShareView Video Upgrade is available which includes a ShareView Video Card, camera and cables necessary to add video capabilities to the standard ShareView 300 system.			
Sourcing Information	ShareView systems are available from authorized resellers. ShareVision Technology, Inc., 1901 McCarthy Boulevard, Milpitas, CA 95035 Tel: 408-428-0330 Fax: 408-428-9871.			

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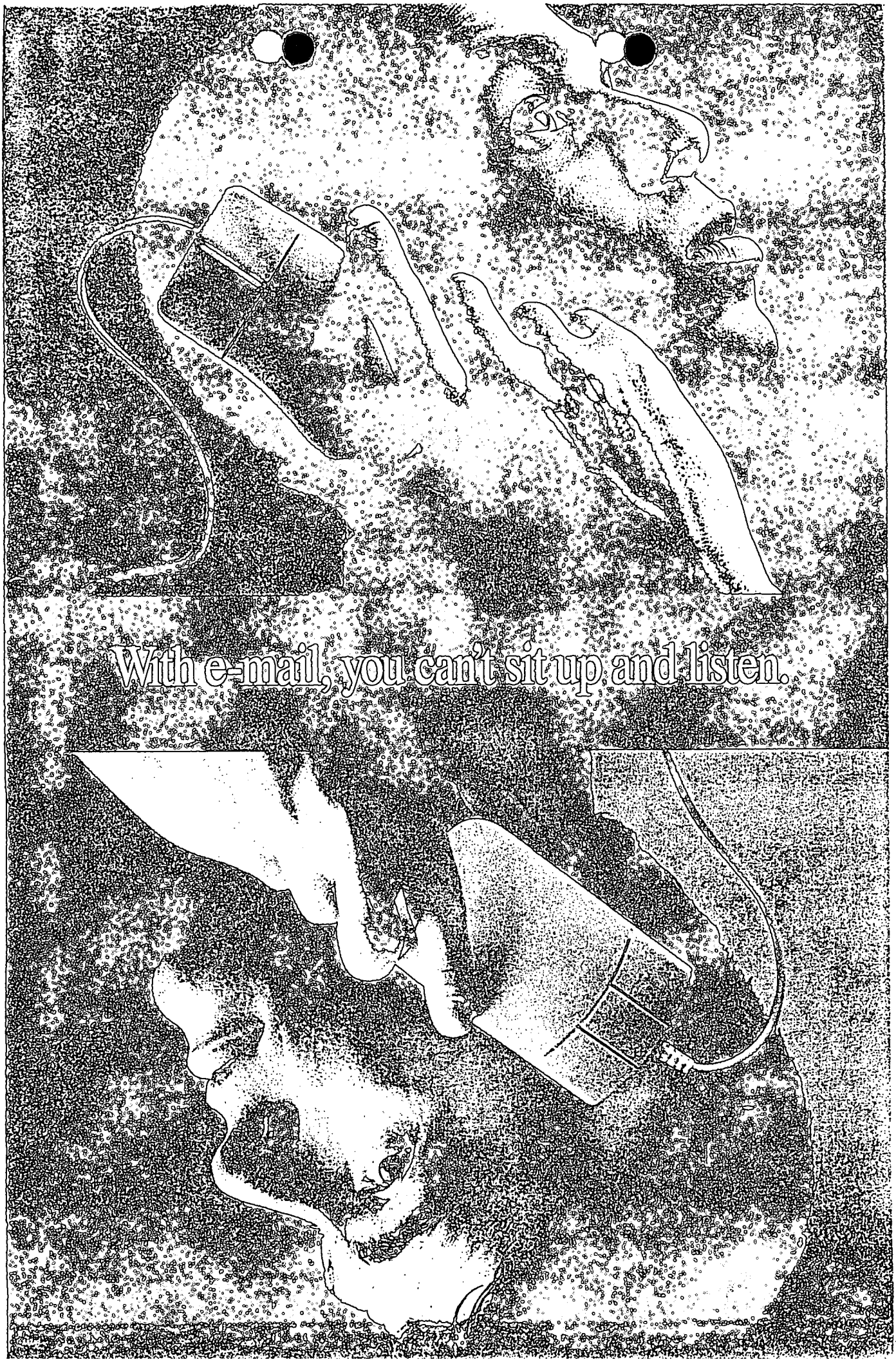
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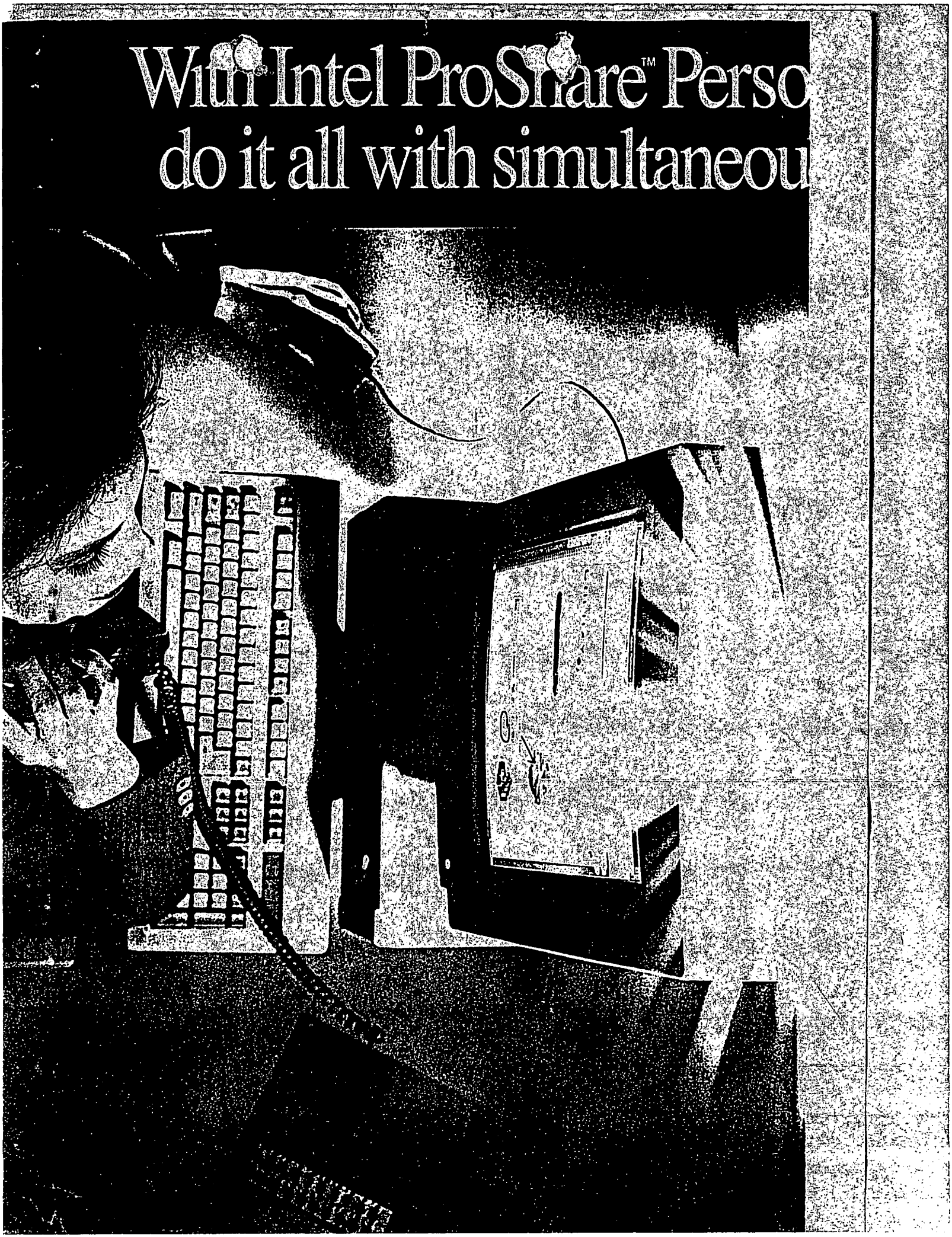
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